

Recovery Plan Action Status

Plan Name: Recovery Plan for Serpentine Soil Species of the San Francisco Bay Area

Plan Status: Final

Plan Date: 30-Sep-98

Lead Agency: USFWS

Lead Office: Sacramento Fish And Wildlife Office

(916)

414-6600)

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|---|-------------------|----------|---|---------------------|----------------------|----------------------|--|----------------------------------|-------------------------------|---|
| Bay checkerspot butterfly (Euphydryas editha bayensis), Tiburon mariposa lily (Calochortus tiburonensis), Metcalf Canyon jewelflower (Streptanthus albidus ssp. albidus), Pennell's bird's-beak (Cordylanthus tenuis ssp. capillaris), San Mateo woolly sunflower (Eriophyllum latilobum), Coyote ceanothus (Ceanothus ferrisiae), White-rayed pentachaeta (Pentachaeta bellidiflora), Presidio clarkia (Clarkia franciscana), Fountain thistle (Cirsium fontinale var. fontinale), Tiburon paintbrush (Castilleja affinis ssp. neglecta), Marin dwarf-flax (Hesperolinon congestum), Tiburon jewelflower (Streptanthus niger), San Mateo thormint (Acanthomintha obovata ssp. duttonii), Santa Clara Valley dudleya (Dudleya setchellii) | 2 | 1.1 | Establish cooperative programs with participants from the public and private sector | Ongoing Not Current | FY 1995 - FY 1999 | | U.S. Fish and Wildlife Service, California Department of Fish and Game | Other: Information and Education | Internal Technical Assistance | Cooperative program established with Stuart Weiss and San Mateo Parks for reintroduction of Bay Checkerspot into Edgewood Park. |

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| Bay checkerspot butterfly (Euphydryas editha bayensis), Fountain thistle (Cirsium fontinale var. fontinale), Marin dwarf-flax (Hesperolinon congestum), San Mateo thormmint (Acanthomintha obovata ssp. duttonii) | 1 | 2.1.11 | Secure and protect serpentine habitat on Pulgas Ridge (San Mateo County) for multiple species | Not Started | | | California Department of Transportation, San Francisco Water Department, U.S. Fish and Wildlife Service, California Department of Fish and Game | Acquisition: Easement | Internal Field Assistance | |
| Bay checkerspot butterfly (Euphydryas editha bayensis), White-rayed pentachaeta (Pentachaeta bellidiflora), Fountain thistle (Cirsium fontinale var. fontinale), San Mateo thormmint (Acanthomintha obovata ssp. duttonii) | 1 | 2.1.13 | Secure and protect serpentine habitat in Triangle area (San Mateo County) for multiple species | Not Started | | | California Department of Transportation, San Francisco Water Department, U.S. Fish and Wildlife Service, California Department of Fish and Game | Acquisition: Easement | Internal Field Assistance | |

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| San Mateo thormmint (<i>Acanthomintha obovata</i> ssp. <i>duttonii</i>) | 2 | 3.2 | Develop and implement monitoring plans for all populations | Partially Complete | FY 2008 | | U.S. Fish and Wildlife Service | Research: Population Assessment | Species Expert | Monitoring plan has been developed and implemented for San Mateo thormmint at Edgewood Preserve as part of efforts to track the population and prevent extinction. |

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| San Mateo thormmint (<i>Acanthomintha obovata</i> ssp. <i>duttonii</i>) | 3 | 4.2.25 | Conduct surveys in historic and potential habitat in melo Park area (east of Woodside) (San Mateo County) for <i>Acanthomintha obovata duttonii</i> | Not Started | | | U.S. Fish and Wildlife Service, California Department of Fish and Game | Research: Population Surveys | Graduate Student | |

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| Bay checkerspot butterfly (Euphydryas editha bayensis), San Mateo thornmint (Acanthomintha obovata ssp. duttonii) | 3 | 4.2.26 | Conduct surveys in historic and potential habitat in Redwood City area (east of Woodside) (San Mateo County) for multiple species | Not Started | | | U.S. Fish and Wildlife Service, California Department of Fish and Game | Research: Population Surveys | Graduate Student | |
| Bay checkerspot butterfly (Euphydryas editha bayensis), San Mateo woolly sunflower (Eriophyllum latilobum), White-rayed pentachaeta (Pentachaeta bellidiflora), Fountain thistle (Cirsium fontinale var. fontinale), Marin dwarf-flax (Hesperolinon congestum), San Mateo thornmint (Acanthomintha obovata ssp. duttonii) | 1 | 5.16 | Conduct research on vegetation management methods in selected areas county-wide (San Mateo county) for multiple species | Ongoing Current | FY 2008 | FY 2010 | U.S. Fish and Wildlife Service, California Department of Fish and Game | Research: Habitat Requirements | Contract | |
| Bay checkerspot butterfly (Euphydryas editha bayensis), San Mateo woolly sunflower (Eriophyllum latilobum), White-rayed pentachaeta (Pentachaeta bellidiflora), Fountain thistle (Cirsium fontinale var. fontinale), Marin dwarf-flax (Hesperolinon congestum), San Mateo thornmint (Acanthomintha obovata ssp. duttonii) | 1 | 5.17 | Conduct surveys in historic and potential habitat on San Francisco Peninsula (south of Presidio) (San Francisco County) for Hesperolinon congestum | Ongoing Current | FY 2000 - FY 2004 | | U.S. Fish and Wildlife Service | Research: Environmental Contaminants | Graduate Student | |

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| White-rayed pentachaeta (Pentachaeta bellidiflora), Fountain thistle (Cirsium fontinale var. fontinale), San Mateo thornmint (Acanthomintha obovata ssp. duttonii) | 2 | 5.22 | Conduct necessary research at Triangle (San Mateo County) for multiple species | Not Started | | | California Department of Transportation, San Francisco Water Department, U.S. Fish and Wildlife Service, California Department of Fish and Game | Research: Management Techniques | Graduate Student | |
| Bay checkerspot butterfly (Euphydryas editha bayensis), Metcalf Canyon jewelflower (Streptanthus albidus ssp. albidus), Coyote ceanothus (Ceanothus ferrisae), Fountain thistle (Cirsium fontinale var. fontinale), Tiburon paintbrush (Castilleja affinis ssp. neglecta), San Mateo thornmint (Acanthomintha obovata ssp. duttonii), Santa Clara Valley dudleya (Dudleya setchellii) | 2 | 5.26 | Conduct necessary research at selected areas county-wide in Santa Clara County on restoring native habitats on serpentine and non-serpentine soils (multiple species) | Not Started | | | Santa Clara County, California, U.S. Fish and Wildlife Service, California Department of Fish and Game | Research: Habitat Requirements | Graduate Student | |

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| Fountain thistle (Cirsium fontinale var. fontinale), San Mateo thornmint (Acanthomintha obovata ssp. duttonii) | 2 | 5.43 | Throughout species' ranges: Develop plant propagation techniques for all listed species and species of concern | Ongoing Current | | | U.S. Fish and Wildlife Service | Research: Habitat Requirements | Graduate Student, Species Expert | Seed from San Mateo thornmint has been germinated at Jepson Herbarium, UC Berkeley. Fountain thistle has been germinated by Washington University researchers. |
| White-rayed pentachaeta (Pentachaeta bellidiflora), Presidio clarkia (Clarkia franciscana), Fountain thistle (Cirsium fontinale var. fontinale), San Mateo thornmint (Acanthomintha obovata ssp. duttonii) | 1 | 6.1.1 | Store the seeds from multiple plant taxa | Ongoing Current | FY 2007 | | San Francisco Water Department, U.S. Fish and Wildlife Service | Research: Genetics | Species Expert | Some Clarkia franciscana seeds collected by UC Berkeley Botanic Garden. Fountain thistle seed collected from 2008 - 2010 has been stored at Rancho Santa Ana Botanic Garden. Some San Mateo thornmint seed is stored at UC Berkeley botanic garden. White-rayed pentachaeta seed was collected in 2010. |
| San Mateo thornmint (Acanthomintha obovata ssp. duttonii) | 2 | 6.2 | Initiate enhancements, repatriations, or introductions, where appropriate | Ongoing Current | FY 2007 | | U.S. Fish and Wildlife Service | Research: Habitat Status | Species Expert | Larvae and adults of Bay checkerspot butterfly reintroduced to Edgewood Natural Preserve, San Mateo Co. San Mateo thornmint seed has been sowed at Edgewood Natural Preserve and has increased numbers of plants. |